Project Title	Burnt Bridge Creek Water Quality, Education, and Restoration Project
Project Short Description	The project will establish a riparian forest along 3-acres of Burnt Bridge Creek (BBC), provide stormwater/clean water education to 22 teachers and 500 students; engage students, parents and 300 volunteers in tree plantings; and develop restoration alternatives and preliminary designs for the 45-acre lower BBC floodplain. Work will implement actions from the BBC Source Assessment Report. Preliminary designs will result in future floodplain restoration with significant water quality benefits.
Project Long Description	The Burnt Bridge Creek Water Quality, Education, and Restoration Project accomplishes three key tasks critical to the future health of Burnt Bridge Creek (BBC) and implements important recommendations from Ecology's Burnt Bridge Creek Fecal Coliform Bacteria, Temperature, Dissolved Oxygen, and pH Source Assessment Report. (BBC Source Report).
	Riparian Restoration: Riparian restoration is a major recommendation of the BBC Source Report. The project will plant 7,2000 native trees and shrubs within a 3-acre section directly adjacent to BBC. Riparian buffers will exceed 150-feet. The project area is between RM 0-2 within the large area with little vegetation.
	Water Quality Education: Public education and outreach is another major recommendation of the BBC Source Report. The project will provide 2-3 stormwater and water quality classroom lessons, and a service-learning tree planting field trip to 22 teachers and about 500 students. Water quality education, particularly place-based, education focused on a specific local creek is critical to teaching youth (and their parents) about the connections between nonpoint pollution and water quality and human health. The project will help students understand how their behaviors and actions impact water quality and what they can to do lessen their stormwater impacts.
	In addition to the water quality education - the project will physically engage students and 300 community volunteers on-the-ground, at the project site planting native trees and shrubs. Active engagement and involvement are the best way to build understanding, support, and stewardship for BBC. Engaging people in riparian tree plantings is the best way to teach people about the importance of riparian restoration, riparian buffers, and how their yards and landscaping influence watershed help. Plantings are led by experienced Estuary Partnership Environmental Educators who provide education at the start of each planting and make the important connections between planting trees and water

General Information

quality and human health.

	Preliminary Restoration Designs: The project's third component is the development of preliminary restoration designs for the lower 45-acre BBC floodplain. Multiple recommendations within the BBC Source Report address this key stream reach. Currently, BBC between RM 0-2 is incised, disconnected from its floodplain, consists of a large open area with little vegetation. This section of the riparian corridor has been identified as a priority planting area by the City of Vancouver . However, simply planting the area without first addressing the watershed processes issues in this reach would miss a large opportunity to improve water quality and habitat conditions and would result in less successful riparian restoration. The City of Vancouver understands the need for a comprehensive analysis of the large lower floodplain and supports the Estuary Partnership's project to develop preliminary restoration designs for this reach. Developing restoration designs now will set the stage for a near-term restoration project that will include reconnecting BBC with its floodplain and large scale plantings that will comprehensively address the large 45-acre lower floodplain.		
Total Cost	\$253,412.00	Total Eligible Cost \$138,121.00	
Effective Date	7/1/2022	Expiration Date 5/30/2025	
Project Category	 Nonpoint Source Activity Onsite Sewage System Stormwater Activity Stormwater Facility Wastewater Facility 		
Will Environmental Monitoring Data be collected?	No		
Ecology Program	Water Quality		
Overall Goal	To significantly improve water quality and habitat conditions in BBC (and by extension Vancouver Lake). To meet that goal - the project will achieve a series of specific goals. The restoration goal of planting 7,200 trees within 3-acres to restore those acres to a healthy, bottomland hardwood and		

General Information

wetland forest, and reduce stormwater inputs, improve water quality, decrease stream temperatures, and improve habitat conditions. The water quality education goal of teaching 500 students about the connections between water quality, stormwater, land use, and watershed conditions. Teaching students about the effects of nonpoint pollution to water quality and human health, and engaging students and volunteers in riparian plantings are key recommendations in the BBC Source Assessment Report and critical to the creek's long-term health. Finally, restoration designs are a critical first step toward achieving significant water quality and habitat benefits in the lower 45-acre BBC floodplain.

Organization: Lower Columbia Estuary Partnership

Project Characterization

WQC-2023-LCEP-00164

Project Themes

Select a primary and secondary theme that best describes the work to be achieved during this project.

Primary Theme: Secondary Theme(s): Nonpoint Source Pollution Riparian/Wetland Restoration Education & Outreach TMDL Support Site Specific Planning for BMP Implementation

Project Website

If your project has a website, please enter the web address below. After entering a website and saving, another blank row will appear. Up to three websites may be provided.

Website Title/Name

Web Address

Recipient Contacts				
Project Manager	Christian Hathaway			
	Contact Information			
	Christian Hathaway Community Programs Director 811 SW Naito Pkwy, Suite 410			
	Portland, Oregon 97204 (503) 226-1565 (503) 226-1580 chathaway@estuarypartnership.or g			
Authorized Signatory	Elaine Placido			
	<i>Contact Information</i> Elaine Placido Executive Director 811 SW Naito Pkwy, Suite 410			
Billing Contact	Portland, Oregon 97204 (503) 226-1565 (503) 226-1580 eplacido@estuarypartnership.org Tom Argent			
-				
	Contact Information			
	Tom Argent Finance Manager			

Recipient Contacts

811 SW Naito Parkway, Suite 410

Portland, Oregon 97204 (503) 226-1565 x242 (503) 226-1580 targent@estuarypartnership.org

Other recipient signatures on printed agreement

Name

Title

Funding Request- Nonpoint Project

Total Eligible Cost:	\$138,121
Grant Request:	\$103,591
Match Required:	\$34,530

IMPORTANT NOTICE. Grants for nonpoint projects require a 25% match. Projects with cash-only match are eligible for up to \$500,000 in grant. Projects with a mix of funds for match are eligible for up to \$250,000 in grant. Cash match includes any eligible project costs paid for directly by the recipient that are not reimbursed by the Ecology grant or another third party. Donations that become the long-term property of the recipient are considered cash match. Loan money provided through the CWSRF is also considered cash match. In-kind contributions are considered non-cash match. More information on match requirements can be found in the Water Quality Combined Financial Assistance Guidelines which are available for download on the Application Menu.

Will your match be cash-only?	Yes 🖌 No
Are you requesting or will you accept loan funds for part or all of the eligible project	Yes 🖌 No
costs or to meet your match requirement?	

IMPORTANT NOTICE. Ecology may provide special loan funding for nonpoint projects in the following case: (1) projects that meet the criteria for "green project reserve" may receive up to 25% forgivable loan. Ecology will determine eligibility for special funding when developing funding packages.

Do you want your project to be considered for GPR subsidy under the CWSRF program?	Yes 🖌 No
NOTE: Projects are only eligible if they meet EPA's GPR criteria, and applicants accept a CWSRF loan. Do you have any secured funds committed to this project?	✓ Yes No
If Yes, complete the Secured Funds Table, and include any secured matching funds if known.	

Source

Туре

Amount Committed

State/Federal agency:

Funding Request- Nonpoint Project

State/Federal agency: State/Federal agency: Interlocal contributions: Interlocal contributions: Interlocal contributions:			
Local agency: Lower Columbia Fish Recovery	Grants	\$34,530.00	
BrdClark County Clean Water Restoration Fund			
Local agency:			
Local agency:			
In-kind contributions:			
In-kind contributions:			
In-kind contributions:			
Other			
Other			
Other			

Organization: Lower Columbia Estuary Partnership

Task Number	1					
Task Title	Grant and Loan Administration					
Task Cost	\$9,073.00					
IMPORTANT NOTICE. The cost of the of the Total Eligible Costs you entered form.	nis task should not exceed 15% d on the General Information					
Task Description	 A. The RECIPIENT shall carry out all work necessary to meet ECOLOGY grant or loan administration requirements. Responsibilities include, but are not limited to: Maintenance of project records; submittal of requests for reimbursement and corresponding backup documentation; progress reports; the EAGL (Ecology Administration of Grants and Loans) recipient closeout report; and a two-page outcome summary report (including photos, if applicable). In the event that the RECIPIENT elects to use a contractor to complete project elements, the RECIPIENT shall retain responsibility for the oversight and management of this funding agreement. B. The RECIPIENT shall keep documentation that demonstrates the project is in compliance with applicable procurement, contracting, and interlocal agreement requirements; permitting requirements, including application for, receipt of, and compliance with all required permits, licenses, easements, or property rights necessary for the project; and submittal of required performance items. This documentation shall be available upon request. C. The RECIPIENT shall maintain effective communication with ECOLOGY and maintain up-to-date staff contact information in the EAGL system. The RECIPIENT shall carry out this project in accordance with any completion dates outlined in this agreement. 					
Task Goal Statement	Properly managed and fully documented project that meets ECOLOGY's grant or loan administrative requirements.					
Task Expected Outcomes	* Timely and complete submittal of requests for reimbursement, quarterly progress reports, Recipient Closeout Report, and two-page outcome summary report. * Properly maintained project documentation.					

Organization: Lower Columbia Estuary Partnership

Scope of Work - Task 1 Grant and Loan Administration: 1

Recipient Task Coordinator		Chris Hathaway					
Deliverable #	Description	Due Date	Received? (ECY Use Only)	EIM Study ID	Latitu de (expr esse d in deci mals)	Longi tude (expr esse d in deci mals)	Location Address
1.1	Progress Reports th include descriptions work accomplished, challenges or chang the project schedule Submitted at least quarterly.	at of project es in					
1.2	Recipient Closeout Report (EAGL Form)					
1.3	Two-page Outcome Summary Report						

Task Number	Task Cost	
Task #1	\$9,073.00	
Task #2	\$28,954.00	
Task #3	\$8,586.00	
Task #4	\$91,508.00	
Task #5	\$0	
Task #6	\$0	
Task #7	\$0	
Task #8	\$0	
Task #9	\$0	
Task Total	\$138,121.00	
Task #:		2
Task Title:		Site Prep, Restoration, and Site Maintenance
Task Cost:		\$28,954.00
Expected Start Date:		7/1/2022
Expected Finish Date:		4/30/2025

Describe the work that will be billed to this task. (char 3,500)

Nearly all funding for this task is being provided through the LCFRB-CCCWRF grant. A portion of that funding is being provided as match for this grant. The remaining LCFRB funding to implement this task are non-match project costs. Work associated with Task 2 includes:

Site Prep: The City will prepare the site for planting by conducting invasive species treatments that consist of mowing/weed-whacking the site and/or applying herbicides. The exact treatment will depend on site conditions and reed canarygrass re-growth. Then, the City will apply a thick, 8 – 12-inch layer of mulch. The City has successfully used this approach at other BBC revegetation sites.

Riparian Planting: The Estuary Partnership will develop and submit to Ecology the required 319 forms for planting projects including: the 05-05 form, the Riparian Planting Plan (plant species, numbers, planting zones, etc.), the Vegetation Management Plan, a signed Landowner

Agreement, the Ecology BMP Approval Form, and an Inadvertent Discovery Plan.

Approximately 500 students, 22 teachers, and 88 parent/guardians volunteer will plant approximately 7,200 native trees and shrubs in a 3-acre riparian area along BBC. Riparian planting buffers will average 150-feet, significantly more than Ecology's 50-foot minimum buffer for the site. Another 300 community volunteers will participate in volunteer planting events. Plantings will take place during the 2022-2023, 2023-2024, and 2024-2025 planting seasons.

Student planting projects consist of a bus trip to and from the field site, and approximately four hours on site. Students learn about native and invasive plants and proper tree planting methods, physically dig holes and plant trees, re-pack soil around roots, and quality check their work. Planting projects build on the stormwater focused school lessons; provide hands-on opportunities to apply this knowledge in the field; connect students with nature; and engage students in activities that promote physical fitness and emotional health. The Estuary Partnership will also lead six volunteer planting projects at the site for community members. At each planting project, the Estuary Partnership will describe the site and discuss the importance of riparian plantings for water quality and species.

Planting at the Alki Road West site will address water quality problems and poor habitat conditions. The riparian plantings will 1) provide shade to help lower instream temperatures; 2) increase dissolve oxygen levels; 3) help stabilize pH levels; and 4) decrease fecal coliform levels by filtering stormwater pollutants.

The Estuary Partnership will monitor plant survival by establishing monitoring plots and monitoring survival after Years 1, 3, and 5. Monitoring will include visual inspection of at least 10% of the plantings. The goal is 75% plant survival. There is a significant commitment and ability by both the City and the Estuary Partnership to ensure the success of the restoration project.

Site Maintenance: The City will complete site maintenance. The City has extensive experience maintaining new plantings along Burnt Bridge Creek. Site maintenance will include post-planting invasive species control – primarily through herbicide treatments. The City will inspect the site on a regular basis and determine the need and schedule for herbicide treatment – but treatments will likely take place 1-2 times per year for 2-3 years between April – September.

Deliverables **To Add a Row** Enter a deliverable When done, click the **SAVE** button After SAVE a new row will appear

To Delete a Row

In the row you want to delete, remove the information in all of the textboxes When done, click the **SAVE** button After SAVE the row will be deleted

Repeat these steps for each deliverable

Deliverables Table (Deliverables are documents that can be uploaded into EAGL to show that work was completed; deliverables should align with the detailed budget provided on the Task Costs and Budget Form and the project schedule uploaded on the Project Planning and Schedule Form)

reject rialing and conclude romily		
Deliverables Description	Deliverable Date	Deliverable Budget
Upload Signed Landowner Agreement	8/1/2022	\$0
Upload Ecology Cultural Resource	8/1/2022	\$4,000.00
Form		
Upload Inadvertent Discovery Plan	8/1/2022	\$0
Upload Riparian Planting Plan	8/1/2022	\$0
Upload Vegetation Management Plan	8/1/2022	\$0
Upload Ecology BMP Approval Form	8/1/2022	\$0
Upload Site Photo Points Sites and	8/1/2022	\$0
Photos		
Upload any Required Permitting (no	11/1/2022	\$0
permits are expected to be needed)		
Upload photos of site prep work	9/30/2023	\$0
Upload photos of riparian planting	4/4/2025	\$12,900.00
projects		
Upload Volunteer Planting Event	4/4/2025	\$12,054.00
Summaries		
Upload Student Planting Event	4/4/2025	\$0
Summaries		
		Total Deliverable Budget:
		Total Task Costs:
"		
lask #:	3	

Stormwater and Water Quality Education

Task Title:

Task Cost:

\$8,586.00

\$28,954

Expected Start Date: 7/1/2022

Expected Finish Date: 4/30/2025

Describe the work that will be billed to this task. (char 3,500)

Nearly all funding for this task is being provided through the LCFRB-CCCWRF grant. A portion of that funding is being provided as match for this grant. The remaining LCFRB funding to implement this task are non-match project costs. Work associated with Task 3 includes:

The Estuary Partnership will deliver a series of two-three, approximately 1-hour classroom lessons to 500 students (about 22 classes) during two school years. Targeted schools (Crestline Elementary, Felida Elementary and Pleasant Valley Middle School) are located relatively near the project site. (Letters of Support from these schools are from a previous application. Due to the pandemic, we were unable to get updated Letters of Support. Through word of mouth, we know these schools still support the project and want to be involved.) In-class or school-yard lessons will make the connection between stormwater and water quality problems, align with grade level science curriculum, and help students meet Washington Science Standards. Lessons will cover water quality and stormwater concepts and provide engaging educational experiences that teach students about the connections between land use, stormwater, nonpoint source pollution, toxic contaminants, water quality and the actions and activities students can take to help lessen those problems. The project will use hands on activities like the Stream Table, in which students use a watershed model to experiment and learn about different land use activities and the impact of water moving through an ecosystem .

As a companion to school-based lessons, the Estuary Partnership will develop and distribute three-four stormwater/clean water focused handouts. These products will engage parents/guardians in their children's classroom learning, provide them with targeted stormwater education, promote the student and parent tree planting events, and promote behavior changes that lesson stormwater impacts and promote clean water. The Estuary Partnership will distribute this information through the schools, and our newsletters, website, and social media.

The Estuary Partnership will deliver the classroom-based education components of the project during two-three school years allowing teachers to be involved through consecutive years.

Students, parents/guardians, and teachers will learn about stormwater – how it's generated and the toxic contaminants it often contains. They'll also learn how stormwater impacts communities, watersheds, and water quality and how their daily actions can either contribute to or lessen stormwater impacts. They'll also learn about the importance of riparian buffers and the role buffers play in protecting water quality and providing habitat benefits to fish and wildlife. Students will be prepared for their service-learning tree planting field trips and learn about the benefits of plant diversity and the habitat and water quality benefits of native riparian plant communities.

The Estuary Partnership will conduct pre- and post-project student surveys to measure students' change in stormwater and watershed

Project Planning and Schedule Form.)

Scope of Work - FOR APPLICATION

knowledge, attitudes, and behavior as a result of the project. The Estuary Partnership partners with Dr. Paul Michael, and Associate Professor of Psychology at Pacific University to develop appropriate test questions and test evaluation methods, and to ensure pre- and post-project surveys are based on sound survey methodology.

Deliverables	
To Add a Row	To Delete a Row
Enter a deliverable	In the row you want to delete, remove the information in all of the textboxes
When done, click the SAVE button	When done, click the SAVE button
After SAVE a new row will appear	After SAVE the row will be deleted
Repeat these steps for each deliverable	

Deliverables Table (Deliverables are documents that can be uploaded into EAGL to show that work was completed; deliverables should align with the detailed budget provided on the Task Costs and Budget Form and the project schedule uploaded on the

, ,		
Deliverables Description	Deliverable Date	Deliverable Budget
Upload a Copy of Each Outreach	4/5/2025	\$0
Product		
Upload Classroom Lesson Plans	4/5/2025	\$4,243.00
Upload Student Tree Planting Event	4/5/2025	\$4,343.00
Summaries		
Upload Pre- and Post Project Survey	4/5/2025	\$0
Questions		
Upload Anonymous Post Project Survey	4/29/2025	\$0
Results		
		Total Deliverable Budget: \$8,586.00
Task #:	4	
Task Title:	Develop Restoration Alternatives, Prelim	
	Designs	

Task Cost:	\$91,508.00
Expected Start Date:	7/1/2022
Expected Finish Date:	4/30/2025

Describe the work that will be billed to this task. (char 3,500)

Nearly all funding for this task is being requested through the Ecology grant. A small portion (\$1,000) of the Task is being provided as match. Work associated with Task 4 includes:

Task 4 works through the steps to develop the Preliminary Design Plans for the restoration of the lower BBC floodplain. The Estuary Partnership, with engineering contractor help will lead the first step - field investigations of the site. The project will: (a) identify potential areas of geomorphic and/or hydraulic interest such as likely locations for Large Woody Debris (LWD) structures and hydraulic features. (b) Deploy/collect surface water and ground water probes. (c) Collect and analyze stream data- longitudinal survey and cross-section transect data from stream surveys. (d) Collect and analyze topographic survey data to supplement existing 2013 LiDAR coverage. (e) Conduct geomorphic survey (substrate, streambanks, field indicators, stability assessment).

The second step is to evaluate hydrology, hydraulics, and geomorphic conditions. The engineering contractor will lead this task with Estuary Partnership assistance and review. Work will include: (a) Using existing hydrology, field/probe data develop typical seasonal instream flow and groundwater water elevations and flood flows (Q2, Q10, Q25, Q100). (b) Assess percent of time overbank/floodplain flows occur. (c) Assess existing hydraulic conditions at-a-station including water surface elevations, water velocities, and shear stresses. (d) Develop geomorphic grade line and historic floodplain elevations and assess effects of current channel conditions . (e) Hydraulic analyses to assess hydraulic conditions at each potential restoration alternative site. The contractor will compute design parameters including water surface elevations of design flows, water velocities, and shear stresses.

The third step will be the development of restoration alternatives. The engineering contractor will lead this task with Estuary Partnership assistance and review. Work will include: (a) Develop restoration alternatives to address ecological impairments using information from Tasks 1 and 2. Actions will evaluate: actions to increase floodplain and wetland reconnection; actions to improve WQ in concert with Ecology and City goals; channel/streambank realignment; wood harvesting placement; sizing and stability criteria; and precautions to reduce risk to downstream infrastructure. (b) To inform/evaluate restoration alternatives develop hydrology, hydraulic conditions under restored conditions, including water surface elevations of design flows, water velocities, and shear stresses. (c) Compare and rank alternatives and select the preferred alternative(s).

The fourth step is to Develop Preliminary Design Report Memo, Preliminary Design Plans (drawings), and a Preliminary Construction Quantities

and Cost Estimate. The engineering contractor will lead most of this task with Estuary Partnership assistance and review. The Preliminary Design Report will include: Existing conditions; Design alternatives; Preferred alternatives; and Design considerations and preliminary analysis (a listing of specific design criteria and design methods, assumptions, analytical results, and how these elements are translated to project designs). The final Preliminary Design Plans and the Preliminary Construction Quantities and Cost Estimates will allow the Estuary Partnership to apply for future implementation funding.

Deliverables

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Enter a deliverable When done, click the **SAVE** button After SAVE a new row will appear Repeat these steps for each deliverable

To Delete a Row

In the row you want to delete, remove the information in all of the textboxes When done, click the **SAVE** button After SAVE the row will be deleted

Deliverables Table (Deliverables are documents that can be uploaded into EAGL to show that work was completed; deliverables should align with the detailed budget provided on the Task Costs and Budget Form and the project schedule uploaded on the Project Planning and Schedule Form.)

Deliverables Description	Deliverable Date	Deliverable Budget	
Topographic Survey Data	8/5/2022	\$10,000.00	
Geomorphic Survey Data	8/5/2022	\$14,000.00	
Stream Survey Data (longitudinal and	8/5/2022	\$11,508.00	
cross-section transect data)			
Hydrology, Hydraulics and Geomorphic	8/5/2022	\$11,000.00	
Conditions Memo			
Restoration Alternatives Memo	2/2/2023	\$10,000.00	
Preliminary Design Report Memo	6/1/2023	\$11,000.00	
Preliminary Design Plans (drawings)	8/1/2023	\$12,000.00	
Preliminary Construction Quantities and	8/15/2023	\$12,000.00	
Cost Estimate			

	Total Deliverable Budget: \$91,508.00
Task #:	5
Task Title:	
Task Cost:	
Expected Start Date:	
Expected Finish Date:	
Describe the work that will be billed to this	s task. (char 3,500)
Deliverables	
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Deliverables Table (Deliverables are docur should align with the detailed budget prov Project Planning and Schedule Form.)	nents that can be uploaded into EAGL to show that work was completed; deliverables ided on the Task Costs and Budget Form and the project schedule uploaded on the

Deliverables Description Deliverable Date

Deliverable Budget

Total Deliverable Budget: \$0

Task #:

6

Task Title:

Task Cost:

Expected Start Date:

Expected Finish Date:

Describe the work that will be billed to this task. (char 3,500)

Deliverables
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Deliverables Table (Deliverables are documents that can be uploaded into EAGL to show that work was completed; deliverables should align with the detailed budget provided on the Task Costs and Budget Form and the project schedule uploaded on the **Project Planning and Schedule Form.) Deliverables Description**

Deliverable Date

7

Deliverable Budget

Total Deliverable Budget: \$0

Task #:		
Task Title:		

Task Cost:

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Expected Finish Date:

Describe the work that will be billed to this task. (char 3,500)

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Deliverables Table (Deliverables are documents t	hat can be uploaded into EAGL to show that work was completed: deliverables

Deliverables Description	Deliverable Date	Deliverable Budget
Project Planning and Schedule Form.)		
should align with the detailed budget provided or	n the Task Costs and Budget Form and the p	project schedule uploaded on the
Deliverables Table (Deliverables are documents ti	hat can be uploaded into EAGL to show that	work was completed; deliverables

Total Deliverable Budget: \$0

Task #:	8
Task Title:	
Task Cost:	

Expected Start Date:

Expected Finish Date:

Describe the work that will be billed to this task. (char 3,500)

WQC-2023-LCEP-00164

Scope of Work - FOR APPLICATION

Deliverables

To Add a Row Enter a deliverable When done, click the **SAVE** button After SAVE a new row will appear Repeat these steps for each deliverable

To Delete a Row

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Deliverables Table (Deliverables are documents that can be uploaded into EAGL to show that work was completed; deliverables should align with the detailed budget provided on the Task Costs and Budget Form and the project schedule uploaded on the Project Planning and Schedule Form.)
Deliverables Description
Deliverable Date
Deliverable Budget

Total Deliverable Budget: \$0

Task #: 9

Task Title:

Task Cost:

Expected Start Date:

Expected Finish Date:

Describe the work that will be billed to this task. (char 3,500)

Deliverables **To Add a Row** Enter a deliverable When done, click the **SAVE** button After SAVE a new row will appear

To Delete a Row

In the row you want to delete, remove the information in all of the textboxes When done, click the **SAVE** button After SAVE the row will be deleted

Repeat these steps for each deliverable

Deliverables Table (Deliverables are documents that can be uploaded into EAGL to show that work was completed; deliverables should align with the detailed budget provided on the Task Costs and Budget Form and the project schedule uploaded on the Project Planning and Schedule Form.)

Deliverables Description

Deliverable Date

Deliverable Budget

Total Deliverable Budget: \$0

Total Task Costs: \$138,121

Describe the process used to estimate the cost of the project. If your process included reviewing similar projects, describe how this review affected your estimate.

Estuary Partnership developed costs based on the projected costs to deliver the project, including anticipated employee costs and rates, indirect, travel, supplies and materials, and contractor costs. costs are based on project hours to deliver the tasks at the relevant employee rate

Costs reflect our experience implementing almost 10 similar water quality education and riparian planting projects in SW Washington. Reviewing those similar projects affected our budget estimate for this project in multiple ways. One, given that the Estuary Partnership has been successfully implementing all those previous projects within the budgets developed, we have high confidence in our project budgeting processes and and our budget for this project. The review also resulted in a number of small adjustments to this budget including: increasing the plant density (and resulting plant costs) in order to increase plant survival and achieve higher plant densities; budgeting for a native seed mix to apply during site prep in order to reduce reed canary grass competition and help the legacy native seed bank reassert itself; increasing staff travel costs - given the pandemic staff are more often traveling in personal cars; and budgeting for archeological services in case a pedestrian survey is required for cultural resource reasons. A current Ecology water quality education and riparian planting project in the Alki Road area did not require any cultural resource work. However, the Estuary Partnership has learned from previous projects to budget for this expense in case an cultural resource issue is identified.

A few additional notes related to the budget.

Most of the project match, and a significant amount of NON-MATCH project costs are coming from an Estuary Partnership LCFRB-CCCWRF grant that will fund the riparian restoration and the water quality and stormwater education. The attached budget details where match is being provided and where NON-MATCH project costs are allocated.

The City of Vancouver will be providing all site prep and site maintenance activities as well as all sort of other project help (such as helping to facilitate access to the site through placement of a temporary bridge). The City's contributions are NOT included in the project budget. Those costs are not easily quantifiable, not necessary match, and needlessly complicate the project budget. For similar reasons, the work that Dr. Paul Michael provides as match to the project are specifically not included in the project budget.

Has the proposed project been demonstrated to be the lowest cost solution to the problem?

If the proposed project is not the lowest cost, describe the other benefits or considerations such as feasibility, community acceptance, or coordination with other projects that influenced the decision making process.

Removing invasive plants and planting native trees and shrubs along streams with temperature TMDLs is the least expensive method to shade streams and help reduce stormwater runoff. It is the only reasonable implementation strategy. Burnt Bridge Creek is part of the Burnt Bridge Watershed TMDL that includes temperature and fecal coliform along with other water quality parameters. The project is cost effective in multiple

Task Costs and Budget

ways: students and parents or guardians are inexpensive and effective planting labor; tree planting requires few up-front costs (only site prep and plants); the Estuary Partnership's planting plan establishes plants quickly and, once established, for no ongoing costs, plants will shade Burnt Bridge Creek, cool water temperatures, and provide a host of other ecological benefits (organic outputs, habitat complexity, future LWD recruitment, etc.).

The Estuary Partnership's planting plan establishes a healthy, self-sustaining vegetation community within a three-year period using multiple cost-effective strategies. The best strategy to kill reed canarygrass is multiple herbicide treatments. Our planting plan forgoes plant tubes—which are expensive to purchase, install, and remove. Instead, the plan emphasizes high density planting and species that recover from animal browse. Planting in rows decreases maintenance and monitoring costs. Finally, five post-planting herbicide treatments protect native plants and allow them to out-compete invasive plant species like reed canarygrass. Post planting maintenance is critical to establishing healthy plants that will provide the shade necessary to help lower Burnt Bridge Creek water temperatures.

The Estuary Partnership has an agreement with the City of Vancouver to work along Burnt Bridge Creek at the Akli Road West site and our Burnt Bridge Creek sites have been incredibly popular with teachers, students, parents or guardians/guardians, and the community. The BBC Alki Road West project expands upon other education and planting work we have or are implementing along Burnt Bridge Creek – including 5.5 acres at Meadowbrook North and 6 acres at Alki Road – and follows the model the City of Vancouver has been using along Burnt Bridge Creek for more than a decade.

For the past four years, we've collected data; built our knowledge of the Burnt Bridge Creek watershed; worked with students, parents or guardians, and volunteers to plant thousands of native trees and shrubs; and gathered post-planting plant survival data. This gives us a demonstrated success record and strong partners to expand our work at Burnt Bridge Creek.

Upload a detailed budget for the project and any supporting documentation, including engineers estimates, cost analysis, etc.

Upload Documents Click the Browse button Select your file Click Save, your file will appear in the List of uploaded documents Repeat for each file To Delete a file, select the Delete checkbox next to the file and click SAVE

Detailed Project Budget PDF

https://ecyeagl/IntelliGrants_BASE/_Upload/186427_936438-LCEP

Task Costs and Budget

FinalBBCBudgetEcologyFY202310.2021.pdf

Project Team

Fill out the following table to describe your Project Team, including staff, contractors, and partner agencies:

Team Member Name/and or Title	Agency/ Company Name	Key Responsibilities	Qualifications/ Experience	Estimated Total Hours Devoted to the Project	Who will take over the person's responsibilities if they are unable to work on the project?
Tom Argent - Finance Operations Manager	e laonorer Columbia Estr Partnership	uar&rgent ensures all contracting, contract reporting, contract invoicing and payments, fiscal record keeping, compliance reporting, match reporting, and Ecology funding requirements are adhered to.	Argent has over 20 years experience managing accounting and financial reporting for grants and contracts. His adherence and streamlining of Estuary Partnership fiscal procedures has resulted in more than 10 unqualified accounting audits. Argent regularly manages accounting and fiscal oversight for more than 40 grants and contracts, including small grants and grants/contracts of more then \$5 million dollars. Argent has worked with Ecology grants for more than a decade.	30.00	Connor Kerns-Accounting & Operations Assistant. Kerns provides daily backup and support to Argent.
Chris Hathaway - Community Programs Director	Lower Columbia Esti s Partnership	uarlylathaway manages all day to day operations of the Estuary Partnership's Community Programs Team. Hathaway will manage all project staff, ensure project deliverables	Hathaway has more than 15 years experience developing and implementing on-the-ground riparian restoration projects in the lower Columbia River.	165.0 0	Elaine Placido - Executive Director. Placido can will large-scale manage projects as needed.

Project Team

		are on track, manage landowner relations, develop and manage contracts, and oversee stormwater and water quality education and volunteer projects.	Hathaway has worked on lower Columbia River projects for more than 20 years and has extensive experience working with landowners, contractors, funding agencies, and community to implement riparian revegetation and other project types. Hathaway has worked on Ecology funded projects for two decades and has successfully managed numerous 319 projects.		
Marci Krass - Re Ecologist	estorati ow er Columbia I Partnership	Estuark/rass manages the on-the-ground aspects of the Estuary Partnership's Community Programs Team's riparian planting projects. Krass coordinates site prep, develops planting and vegetation management plans, completes cultural resource forms, orders plants, coordinates with the Volunteer Coordinator and Env. Educators to schedule and coordinate planting days, coordinates with the City for site prep. site	Krass has more than 15 years' experience managing large scale riparian restoration projects in the Willamette Valley - including site prep, planting plan development, and plant maintenance. She has extensive experience working with landowners and vegetation management contractors. Since joining the Estuary Partnership in April 2021 she has quickly come up to speed on the Estuary Partnership's Ecology and	300.0 0	Chris Hathaway - Community Programs Director or staff from the Estuary Partnership Science Team.

other SW Washington

maintenance, and if

Organization: Lower Columbia Estuary Partnership

Project Team					
		possible, and irrigation. Krass will also lead most aspects of Task 4	planting projects.		
Paul Kolp - Senior Pr Manager/Ecologist	d jeov ter Columbia I Partnership	Estuart column as provides the second	Kolp has been managing restoration projects in SW Washington for the Estuary Partnership for more than a decade. He has extensive experience working with contractors, gathering field data, overseeing the development of restoration alternatives, and working with public landowners to collaboratively develop floodplain restoration projects	80.00	Curtis Helm - Principal Restoration Ecologist or another Estuary Partnership ecologist.
Sam Dumont - Volunteer Coordinator Partnership aspects of the volunteer planting projects including outreach, recruiting volunteers, signing volunteers up, coordinating with volunteer groups, coordinating with Krass on planting details, coordinating with the City of Vancouver on access details, coordinating and communicating any Covid protocols, and completing post-event follow up and engagement.		Dumont has been working on lower Columbia River education and planting projects with the Estuary Partnership since 2010. Over the years she has engaged thousands of students and thousands of volunteers in planting projects throughout SW Washington, including on multiple Ecology grants. Dumont has an MA in teaching and is a licensed teacher - skills and experience that helps her	124.0 0	Chris Hathaway or Erinne Goodell Estuary Partnership Communications and Outreach Coordinator.	

Organization: Lower Columbia Estuary Partnership

Project Team				
McKenzie Miller - Senioorwer Columbia E Environmental Educat@artnership	stuarMiller will lead curriculum development, materials development, and classroom lesson development. Miller will coordinate with teachers and determine classroom and field visit schedules. Miller will deliver classroom and field programs.	excel at engaging students and volunteers in riparian planting projects. Miller has been leading environmental education programs in the lower Columbia River region for more than 15 years. She has developed and delivered stormwater, water quality, ecology, watershed, and other environmental education focused classroom and field trip lessons to thousands of students working with hundreds of teachers at dozens of sites in SW Washington. Miller has a BA in Environmental Studies.	excel at engaging students and volunteers in riparian planting projects. Miller has been leading 200.0 Another Estuary Partnership environmental education 0 Environmental Educator. programs in the lower Columbia River region for more than 15 years. She has developed and delivered stormwater, water quality, ecology, watershed, and other environmental education focused classroom and field trip lessons to thousands of students working with hundreds of teachers at dozens of sites in SW Washington. Miller has a BA in Environmental	
Tonya McLean - Lower Columbia E Environmental Educat	stuarMcLean will assist with project reporting and participate in all aspects of the project's water quality and stormwater focused education and on the ground planting projects with students and volunteers. McLean will work teachers, develop and deliver classroom programs, and help	McLean has more than 15 years experience developing and delivering classroom and field based education to students and adults - including almost 10 years working on the lower Columbia River, including multiple SW Washington projects funded by Ecology. McLean has a MS in Sustainable	280.0 0	Chris Hathaway for the reporting. Another Environmental Educator for the relevant education work.

Organization: Lower Columbia Estuary Partnership

WQC-2023-LCEP-00164

Project Team					
		coordinate and lead student and volunteer planting projects.	Development.		
James Sterrett - Environmental Educa	Lower Columbia Es t&artnership	tuar§terrett will participate in all aspects of the project's water quality and stormwater focused education and on the ground planting projects with students and volunteers. Sterrett will work teachers, develop and deliver classroom programs, and help coordinate and lead student and volunteer planting projects.	Sterrett has more than 15 years experience developing and delivering classroom and field based education to students and adults - including almost 10 years working on the lower Columbia River and on multiple Ecology funded riparian planting/water quality education projects. Sterrett has an MA in teaching and is a licensed Elementary School teacher.	250.0 0	Another Estuary Partnership Environmental Educator
Alexander Rhodes - Lower Columbia Estuartichodes will participate in Environmental Educatoriartnership all aspects of the project's water quality and stormwater focused education and on the ground planting projects with students and volunteers. Rhodes will work teachers, develop and deliver classroom programs, and help coordinate and lead student and volunteer planting projects.		Rhodes joined the Estuary Partnership in 2021 and brings a culturally responsive lens to curriculum and place-based learning. He's developed on-line curriculum during the pandemic and has started delivering in-person water quality lessons and field trips. Prior to joining the Estuary Partnership he facilitated programs for BIPOC and low-income	250.0 0	Another Estuary Partnership Environmental Educator	

Organization: Lower Columbia Estuary Partnership

		F	Project Team		
Andy Bauer -	Lower Columbia	EstuarBauer will participate in all	youth. Rhodes has a BA in Environmental Studies and Coastal Management. Bauer has been	161 0	Another Environmental Educator
Environmental Edu	ucat@artnership	aspects of the project's water quality and stormwater focused classroom education. Bauer will work teachers, and develop and deliver classroom programs. Bauer will also help with data collection and field investigations for Task 4 - particularly, as a licensed drone pilot - by conducting drone flights for topographic survey information, aerial photos, etc.	developing and delivering a wide range of water quality, stormwater, watershed and other environmental education lessons for the Estuary Partnership for more than 8 years. Prior to that he was a high school science teacher and a homeless youth career and college guidance counselor. He has an MA in teaching. Bauer also has a drone pilot license and drone flying experience, as well as specialized videography skills.	0	The Estuary Partnership's Sarah Kidd for the drone work.
Keith Marcoe	GIS & Data Mana Specialist	ageme M arcoe will participate in a variety of field data collection, processing, and analysis associated with Task 4 - including installing and calibrating equipment, running survey gear, etc.	Marcoe has been managing and constructing data and databases to support the Estuary Partnership's monitoring, restoration, and education programs since 2008. Marcoe has extensive experience installing, calibrating, and processes data from a wide range of	40.00	Other Estuary Partnership staff.

Project Team

technical survey, monitoring, and assessment equipment. Marcoe has previously worked as a microwave electronics engineer. He has an MS in Marine Environmental Science, a BS in Electrical Engineering, and a GIS graduate certificate.

Describe similar projects that your project team or organization has completed. Note any deviations from the original proposal in scope, budget, or schedule and briefly describe project success and lessons learned. If the project was funded by Ecology, include the Ecology grant or loan number.

The Estuary Partnership has over 22 years' experience implementing grants that focus on water quality, habitat restoration, student and volunteer riparian plantings, environmental education, and other actions that improve the lower Columbia River. The Estuary Partnership manages multiple large, multi-year grants and dozens of small grants and awards and all organization audits have been unqualified. The organization regularly meets and exceeds grant, contract, federal, state and other applicable requirements and all reporting deadlines. All closed awards have been completed with no financial, reporting, or other concerns by the funder at closeout. The Estuary Partnership works early and often with funders if we anticipate on-the-ground conditions, or other factors (such as a pandemic) may impact results or deliverables.

The Estuary Partnership has worked on multiple similar projects including two in the East Fork Lewis River : the East Fork Lewis River Side Channel Restoration Project (WQC-2017-LCEP-00115) - installed large wood, planted 12-acres of riparian forest; and the La Center Bottoms Project (WQC-2015-LCEP-00086) - integrated riparian restoration with stormwater focused classroom lessons and student tree planting projects.

Through multiple WQC grants (WQC-2018-LCEP-00122 Salmon Creek; WQC 2019-LCEP-00205 (Woodin Creek in Battle Ground); WQC-2019-LCEP-00199 at Burnt Bridge Creek in Vancouver at Alki Road); and through five Lower Columbia Fish Recover Board grants (BBC Meadowbrook North, Salmon Creek, BBC Alki Road, Campen Creek, and BBC Alki Road Phase 2); and through multiple Ecology OTGP grants (OTGP-VER1-LCEP-00028 and OTGP-2020-LCEP-00023) the Estuary Partnership is combining riparian restoration along important SW Washington streams with student focused water quality and stormwater education, and student and volunteer plantings. **Project Team**

The Estuary Partnership has planted thousands of native trees and shrubs, restored significant riparian acreage, and innovatively integrated stormwater education and riparian planting projects. Combined the water quality focused education, and the more than 20-acres of riparian planting will have important, and growing, water quality benefits for Salmon Creek, Woodin Creek, Campen Creek, the East Fork Lewis River, and Burnt Bridge Creek. Water quality education, on-the-ground engagement, and riparian tree plantings will benefit Washington water quality for generations.

Project Start Date

7/1/2022

The date the actual work will start, or if interim refinance, the date the work started.

List and describe the criteria you used to determine the value and feasibility of the project.

Examples: useful life, installation cost, site suitability, and environmental justice.

The Estuary Partnership evaluated the value, feasibility, and site suitability of the proposed project by reviewing BBC Source Report, Clark County's "Lower Burnt Bridge Creek Stormwater Needs Assessment," the "City of Vancouver's 2019 Stormwater Management Plan," the Estuary Partnership's "Management Plan for the Lower Columbia River," by having extensive conversations with Brian Potter and Tim Esary from the City of Vancouver's Greenway-Sensitive Lands/Public Works Department, and by conducting site visits with Contractors and Estuary Partnership Ecologist with extensive instream and floodplain connection expertise. The Estuary Partnership also discussed the project with Leanne Whitesell and Devan Rostorfer of Ecology's SW Region.

Stormwater education and outreach and riparian restoration are a priority for all plans noted above and Burnt Bridge Creek has been a growing priority for the City of Vancouver and Ecology for many years. Stormwater education and outreach and riparian restoration are also key aspects of NPDES permits, of Ecology's Western Washington Stormwater Manual, and of the Estuary Partnership's Comprehensive Conservation Management Plan (CCMP) for the Lower Columbia River. The Estuary Partnership has been working with students in the classroom and the field for more than 20 years, and over the last six years has prioritized stormwater focused education that ties in with field-based native tree planting projects. Over the last six years, the Estuary Partnership has coordinated student and/or volunteer riparian planting projects that have resulted in the planting of more than 20,000 native trees and shrubs across multiple sites. We have proven the value, feasibility, and site suitability of combining stormwater education with student and parent riparian planting projects.

The Estuary Partnership considered other project sites but ultimately decided that addressing the lower BBC floodplain right now was critically important given the site's needs, Ecology's BBC Source Report and ongoing BBC efforts, the synergy of other Estuary Partnership planting projects at the site, and to take advantage of the match provided by the Estuary Partnership's LCFRB-CCCWRF grant. The 3-acre planting site where work will take place lacks a healthy riparian buffer and clearly needs intervention to reestablish a larger, denser, self-sustaining riparian forest. Finally, the City has prioritized the site for restoration and they both strongly support the project and are an active partner. Long term project success and maintenance of the project's water quality benefits is highly likely given the City of Vancouver's commitment to the site and the project. Specifically, the City's willingness and ability to provide long-term site maintenance will ensure that new native trees and shrubs survive and thrive into a free-to-grow state. The City will also be highly involved in the development of the project's restoration alternatives and preliminary designs - ensuring that developed designs will be supported and prioritized for implementation by the landowner.

Environmental and land use practices and policies inequitably harm people of color, Indigenous peoples, and people with lower incomes. These overburdened populations are exposed to higher levels of contaminated air, soil, and water and are more vulnerable to the impacts of climate

change. As a result, people of color, Indigenous peoples, and low-income people experience higher rates of cancer, neurological disorders, infertility, learning disabilities, and other negative health outcomes. Educational disparities also persist for marginalized communities which hinder success in school, affecting careers and income later in life.

The Estuary Partnership has become increasingly aware of these and other environmental injustices over the years, and as a workplace that supports the individual development of staff and board, we have invested funds and staff time to build our diversity, equity and inclusion (DEI) capacity. All staff and several board members have participated in formal, multiday training led by the Center for Diversity and the Environment. All staff meetings, management meetings and Board meetings now have a DEI focus. We are developing a DEI strategy for the organization and have compiled a library of DEI materials that provide on-going reference materials to further our education.

We believe the health of the Columbia River will only be sustained if all communities, all people, are equitably part of its care. Many people continue to experience discrimination due to race, ethnicity, gender, ability, income, (to name only a few), and we recognize our role in perpetuating this discrimination. We are committed to changing the way we do our work to create more equitable projects and programs that welcome and engage communities that have been most impacted by ecological degradation.

Specifically to this project - the Estuary Partnership prioritizes working with school who have high populations of people of color and high populations of students who qualify for free or reduced priced lunch. Two of our Environmental Educators are people of color - allowing students of color to better identify with Educators, to engage in the work, and to have important role models. To address language barriers the Estuary Partnership will translate outreach materials, and relevant classroom lessons into the an alternative language. All Estuary Partnership Educators have gone through ACES (Adverse Childhood Experience) trauma training, have studied texts like Culturally Responsive Teaching and the Brain.

Briefly describe all project alternatives (including the preferred alternative) considered, and explain how each alternative met or failed to meet the criteria listed above.

Use one line for each alternative and click "save" to enter additional alternatives.

Description of Alternative	Criteria
Preferred Alternative: Provide stormwater and water quality	Providing water quality education meets the criterial of
focused environmental education.	restoring BBC, of educating students about water quality, and
	of addressing a key recommendation in the BBC Source
	Report.
Preferred Alternative: Conduct site prep, planting 7,200 native	Riparian restoration meets the criteria of restoring BBC,

trees and shrubs, and provide site maintenance to establish a healthy, self-sustaining riparian forest that improve BBC water quality and habitat conditions.

Preferred Alternative: Engage 500 students and 300 volunteer in riparian planting efforts to engage them with the site, teach them about the importance of riparian buffers, build BBC stewardship, and increase community concern about BBC water quality.

Preferred Alternative: Develop restoration alternatives and preliminary designs to address watershed processes, streambank incision, lack of floodplain connection and other issues within the lower 45-acre BBC floodplain.

Alternative 1: Don't do stormwater and water quality education.

Alternative 2: Don't do riparian plantings.

improving BBC water quality, improving habitat conditions, and implementing a key recommendation in the BBC Source Report.

Education and engagement through riparian tree planting projects are a proven way to build stewardship, commitment, and concern for project sites. Student and volunteer will learn how to plant trees, the benefits of riparian buffers, and how their yards and landscapes impact water guality. Engaging students and community volunteers will implement a key recommendation in the BBC Source Report. Successful restoration of the 45-acre lower BBC floodplain will depend on re-establishing self-sustaining watershed processes within the reach. Simply planting the large, reed canary grass filled open area between RM 0-2 will be ultimately unsuccessful without re-establishing watershed processes that better connect BBC with its floodplain. Preliminary designs are a necessary first step on the path towards an on-the-ground restoration project. Developing these designs, and the subsequent restoration project will implement key recommendations in the BBC Source Report including Riparian Restoration and Groundwater and Streamflow Recommendations.

All water quality improvement and salmon restoration plans acknowledge the importance of a public that understands watershed processes, the importance of clean water to human health. Teaching youth about these important concepts as part of their school-based education is one of the best ways to build a public constituency for healthy water quality and watersheds. Not doing the water quality and stormwater education ultimately results in water quality that does not improve.

Not doing the planting now, or delaying the planting will further delay the establishment of a rich riparian buffer along this

Alternative 3: Don't engage students and volunteers in the planting projects.

Alternative 4: Don't develop the restoration alternatives and preliminary designs.

section of BBC and delay the water quality and habitat improvements that would result from the establishment of this riparian buffer. With ongoing climate change impacts it is important to get trees in the ground and growing so that their shading, and other water quality benefits can begin to accrue. We don't expect planting within this 3-acre site to be particularly impacted by a future restoration/floodplain restoration as the buffer width is extremely large compared to the length along the creek.

The Estuary Partnership considered utilizing contractors to plant the 7,200 native trees and shrubs. This was not a viable alternative for multiple reasons including - the City of Vancouver not authorizing vegetation management contractors to work on their property (the City has an active greenway program and rightfully sees contractors as taking away viable City jobs). Additionally, utilizing contractors would significantly increase costs, and would prevent the project from delivering the community engagement, stewardship, and water quality education associated with on-the-ground community riparian planting projects.

This is the time to take a comprehensive look at the lower 45-acre BBC floodplain. A LCFRB grant provides match, the Ecology TMDL work is moving forward, the City of Vancouver is supportive, and everyone agrees that planting additional acres downstream of Site 3 without addressing watershed process would miss giant opportunities to better connect the creek with it's floodplain and through that achieve all the important water quality and habitat benefits that would result from that. Not addressing the lower reach would leave the creek incised, disconnected from it's floodplain, unable to capture and attenuate pollutants, and unable to fully support the riparian restoration that hte BBC Source Assessment and other plans call for.

List project stakeholders and provide documentation showing key stakeholders have been identified and will support the project.

City of Vancouver Lower Columbia Fish Recovery Board Friends of Vancouver Lake Crestline Elementary School Felida Elementary School Pleasant Valley Middle School

All project stakeholders have been involved in the decision-making process for the project. The City of Vancouver owns the project site and they understand the importance of engaging students and parents/guardians in stormwater education, on-the-ground stewardship activities, and the development of restoration designs and they actively support all project elements.

The LCFRB is providing all project match through an Estuary Partnership LCFRB-CCCWRF grant. The LCFRB understand challenge of piecing together projects, and the importance of restoring watershed process as a key part of water quality and habitat improvement projects. As a small urban stream without significant salmon resources, finding funding to implement BBC restoration processes is more challenging. Building on existing grants and projects and creating synergy between funding sources is an important and necessary way to more restoration of the 45-acre lower BBC floodplain forward.

Friends of Vancouver Lake support the project because of BBC's connection to Vancouver Lake. Friends of Vancouver Lake understand the role BBC can play in the Lake's health and earlier this year demonstrated a pilot project to remove phosphorous from BBC. They understand that reconnecting BBC to it's floodplain in this 45-acre reach will provide significant pollution attenuation. Friends will help review restoration alternatives and comment on preliminary designs. As an active, community group, led by Vancouver area leaders, the Friends can be an important community driver for subsequent restoration work in the lower floodplain.

Crestline Elementary, Felida Elementary and Pleasant Valley Middle School and are long-time supporters of the Estuary Partnership and value our education program. Teachers have participated in a variety of Estuary Partnership led education and service learning projects over the years – including previously funded Ecology projects. The teachers have helped shape our stormwater curriculum and have provided input into the field trip logistics and staging. We connect with teachers beforehand to learn about their classroom units and how our program can best support thier curriculum goals as well as Washington State standards. Teachers continue to be enthusiastic partners who are thrilled to provide their students with close-to-home, on-the-ground, field experiences that connect their local natural resource in an educational and rewarding way.

Describe the steps you have taken to be ready to start the project by May 1, 2023. Provide detailed information and documentation

on project elements such as status of designs, permits, interlocal agreements, landowner agreements, easements, other secured funding, staff, or agency approvals.

The Estuary Partnership is ready to proceed almost immediately with the project. Participating schools are secured and supportive of the project. The Estuary Partnership and the City of Vancouver have agreed to work together on riparian restoration and the LCFRB has funded the restoration and water quality education and engagement work. The Estuary Partnership is already working on two nearly adjacent sections Site 1 and Sites 2a and 2b along Burnt Bridge Creek at the Alki Road area. In addition the Estuary Partnership has extensive experience with Ecology grants and the type of start -up planning, Ecology forms, and processes that need to be completed before initiating work. The Estuary Partnership also has existing financial tracking systems, Executive Director leadership, on-the-ground staff resources to facilitate work starting immediately. The project will not require NEPA, SERP, or SEPA review. The Estuary Partnership will complete a Washington State 05-05 form as part of the project and follow through on any archeological requirements (a determination of "no impacts" was made at our Alki Road project site (WQC-2019-LCEP-00199) and we would anticipate a similar determination at this 3-acre planting site.

The City of Vancouver submitted a landowner agreement for the 3-acre planting project as part of our LCFRB-CCCWRF application. It Ecology would like a separate landowner agreement - it will be simple and straightforward to procure.

Finally development of restoration alternatives and preliminary designs will also not require any particular permits or authorizations (though an eventual restoration project obviously would.) The Estuary Partnership has staff resources and expertise to conduct the initial field investigations of the 45-acre lower floodplain site. The Estuary Partnership has also extensive experience recruiting, evaluating, and developing scopes of work and contracts with environmental engineering or water resource contactors. From a restoration perspective, restoring the BBC floodplain will be relatively straightforward (easy access, small creek, wide open floodplain with few constraints, etc). and we expect it won't be difficult to contract with a highly experienced contractor to help evaluation hydrology, hydraulics and geomorphic conditions, to develop restoration alternatives, and to develop a preliminary Design Report Memo, Preliminary Design Plans (drawings), and a Preliminary Construction Quantities and Cost Estimate.

For stormwater facility and wastewater facility projects: Do you own or have clear control over the entire project area?

✓ Yes No Not Applicable

For stormwater facility and wastewater facility projects requiring road cuts: When was the last time the road was resurfaced or reconstructed? This is for informational purposes; no points are associated with this question.

Date:

Have you reviewed the area of potential effect (APE) in the Washington Information System for Architectural and Archaeological Records Data (WISARRD) database? This is for informational purposes; no points are associated with this question

✓ Yes No Not Applicable

Upload a project schedule that includes all tasks necessary to complete the project, including tasks that are not part of the funding request.

Upload any other supporting documentation.

Upload Documents

https://ecyeagl/IntelliGrants_BASE/_Upload/186348_936443-SFY23BBC WQEducation,Planting,Restoration-ProjectScheduleFINAL.pdf Anticipated Project Schedule

To go to the Water Quality Atlas, follow this link: <u>https://fortress.wa.gov/ecy/waterqualityatlas/StartPage.aspx.</u>

Name the specific water body(ies) this project will improve or protect and the parameters it will address.

The project will improve Burnt Bridge Creek. The project will address - temperature, fecal coliform bacteria, dissolved oxygen, and pH.

In 2004, the LCFRB Recovery Plan rated Lower Burnt Bridge Creek as having impaired riparian conditions with none to low LWD recruitment levels. Clark County's "2008 Stormwater Needs Assessment for Lower Burnt Bridge Creek" details the poor water quality, and poor biological, habitat, and hydrologic conditions along the creek; "Lower Burnt Bridge Creek owns the distinction of having more 303d listed segments (25 Category 5 listings and 5 Category 2 listings) that any other water body in Clark County." It recommends riparian enhancement projects, and notes that education programs are a critical element in modifying behavior and promoting better public stewardship.

Improving the BBC's water quality will help improve Vancouver Lake water quality (Category 5 listed for total phosphorus and bacteria) and plagued with blue-green algae blooms.

Is the project planning, implementation, or a combination? (For facility projects: check "Planning" for planning and design projects; check "Implementation" for construction projects; check "Planning/Implementation" for combined design/construction projects.) Planning

Implementation

✓ Planning/Implementation

What type of plan or regulatory requirement does this project address?

 TMDL/TMDL Alternative (approved or in development)/Straight to Implementation Wastewater Engineering Report/Sewer Plan Permit Salmon Recovery Plan Watershed Plan Shoreline Master Plan Administrative Order or Other Legal Action Capital Improvement Plan Puget Sound Action Plan Mitigation Other Not Applicable

If your project is addressing a TMDL, select at least one from the dropdown list. To select multiple TMDLs, hold down the control key as you select

TMDL Name

Burnt Bridge Creek TMDL Alternative (In Development)

Enter the implementation action and plan reference in the Action Table. If this is a planning-only project, you may enter, "Not applicable, planning-only".

To add multiple implementation actions: Enter the implementation action and plan reference. When done, click the **SAVE** button. After SAVE a new row will appear. Repeat these steps for each implementation action.

Action Table

Action

Implement stormwater education programs that generate public awareness, inspire stewardship, and affect behavior change to improve water quality. Implement riparian forest restoration on all priority planting areas in the BBC watershed where soils and hydrology support forested conditions. Prioritize the river miles with the highest shade deficits for riparian restoration. In the lower watershed the

average shade deficit is 25%.

Reference the document that describe the action, including page numbers and where a copy can be obtained.

Burnt Bridge Creek Source Assessment Report: Recommendations. Stormwater. Last bullet. Page 77

Burnt Bridge Creek Source Assessment Report: Recommendations. Riparian Restoration. Page 78.

Burnt Bridge Creek Source Assessment Report: Recommendations. Riparian Restoration. Page 78.

Burnt Bridge Creek Source Assessment Report: Recommendations. Riparian Restoration. Page 78.

However, between RM 0-2 there is a large open area with little vegetation. This is a priority planting area. Continue to increase restoration Burnt Bridge Creek Source Assessment Report: Recommendations. Riparian Restoration. Page 78. activities and vegetation plantings in riparian areas to increase shade. Continue implementation of Burnt Bridge Creek Source Assessment Report: Recommendations. Riparian Restoration. Page 78. restoration and conservation programs led by the City of Vancouver and Clark County; partner with other local stakeholders to improve water quality in the watershed. Protect and restore natural flood Burnt Bridge Creek Source Assessment Report: Recommendations. Riparian Restoration. Page 78. plains, riparian habitats, and microclimate enhancements that increase the number of cold-water refuges available and improve the overall habitat quality for salmonid Implement creek restoration Burnt Bridge Creek Source Assessment Report: Recommendations. Riparian Restoration. Page 78. projects that enhance channel complexity Complete additional studies to Burnt Bridge Creek Source Assessment Report: Recommendations. Groundwater and Streamflow. identify priority areas for Page 79. streamflow restoration activities to promote infiltration and groundwater recharge in the Burnt Bridge Creek watershed. Provide public outreach and Burnt Bridge Creek Source Assessment Report: Recommendations. Public Education and Outreach. education activities throughout Page 79.

the local watershed community	
about the effects of nonpoint	
pollution to water quality and	
human health.	
Increase outreach to private	Burnt Bridge Creek Source Assessment Report: Recommendations. Public Education and Outreach.
landowners to encourage	Page 79
voluntary implementation of water	
quality BMPs on streamside	
properties. These outreach efforts	
should be targeted towards the	
following audiences:	

Did you discuss this project with Ecology staff? If yes, provide the name of the staff and the last date of contact.

Estuary Partnership staff discussed the project with Leanne Whitesell on Friday, October 8, 2021. Whitesell is the project manager overseeing multiple Estuary Partnership / Ecology grants and has previously visited the Estuary Partnership's other Alki Road site project (WQC-2019-LCEP-00199). Staff have also discussed the project with Devan Rostorfer, Water Quality Specialist.

Describe how the project drainage area connects to the water body.

Examples: surface flow, ditch, pipe, groundwater, infiltration, and path/distance to outfall/discharge.

The project site (Site 3 on the Map) is directly adjacent to BBC. The 3-acre site extends more than 150 from the creek and was designed to fill in the section between the upslope and the creek. The entire drainage area of the project site is within the Burnt Bridge Creek floodplain and rainfall flows via surface flow or groundwater to the creek. Similarly the lower 45-acre floodplain that is the focus for the development of restoration alternatives and preliminary designs is also entirely of the Burnt Bridge Creek floodplain. The drainage area of the floodplain is directly connected to the creek within this 45-acre area (no barriers or control structures block natural surface or groundwater flow. (The concrete culvert connecting Burnt Bridge Creek to Vancouver Lake at the downstream extent of the project site is outside the main focus of this work.)

Describe the measure and method that will be used to determine the water quality benefit and overall success of the project.

If you need help determining a water quality metric, please refer to the Funding Guidelines for suggested metrics by project type. The Estuary Partnership will document water quality benefits and the overall success of the BBC Alki West project through five evaluation measures.

Measure Invasive Plant Species Eliminated: Estuary Partnership staff will establish approximately five-seven photo points to document invasive plant health before and after each site prep treatment Before and after each treatment by City of Vancouver staff, the Estuary Partnership will

photographically document site conditions to ensure treatments were effective.

Measure Conformity of Plantings with Established Planting Plan: A specific Riparian Planting Plan for will be developed in collaboration with the City and submitted to Ecology for approval. The plan will identify plants, plant densities, plant types, and where plants should come from. The Estuary Partnership will evaluate implementation metrics against the planting plan. Implementation metrics within 90% of the planting plan will be considered successful. All plantings will conform to Ecology's Riparian Restoration and Planting requirements.

Measure Plant Survival: The Estuary Partnership will measure plant survival within the 3-acre project area after one, three, and five years using the established photo points and a visual inspection of plantings. The plant survival goal is 75% after five years, recognizing the site's size, the number of plantings, and the potential for beaver, deer, and other animal browse and predation. Plant survival will be enhanced by the City of Vancouver's commitment to post-planting site maintenance. The City will inspect the site and regularly maintain the site (herbicide treatments around new plants). The City's commitment to site maintenance will significantly enhance plant survival. If the Estuary Partnership finds plant survival rates falling below the 75% goal, the Estuary Partnership and the City will attempt to determine the cause and make the appropriate changes to the planting plan, site prep, or site maintenance methods.

Measure Student Knowledge: Changes in student knowledge will be assessed with pre-and post-project tests. Pre-project tests establish baseline data to gauge students' knowledge of stormwater and watershed concepts and their attitude toward nature . Post-project tests measure the projects' impact on changes in stormwater knowledge, the stormwater-clean water connection, and affinity for nature. The Estuary Partnership will ensure that sample size will be large enough to ensure statistically meaningful results. The Estuary Partnership will closely evaluate post project results throughout the project and adapt program curriculum and delivery to ensure project success. The Estuary Partnership partners with Dr. Paul Michael an Associate Professor of Psychology at Pacific University to develop appropriate test questions , test evaluation methods, and to ensure pre-and post-project surveys and tests are based on sound survey science. The Estuary Partnership's assessments over several years on similar projects show that students' knowledge of issues affecting their watershed increased through the project . In addition, teachers indicate in evaluations that students retain a large percentage of information, that project align with Washington State Standards and that project provide a rare opportunity for students to apply concepts learned in the classroom out in the field.

Measure the Number of Participants and Trees/Shrubs Planted: The Estuary Partnership has tracking systems to quantify participation in educational and on-the-ground activities. We will track participant numbers and the hours that participants are engaged for every activity, including the outdoor physical activities that directly engage them with nature. The Estuary Partnership will also track the number of plants, plant species, plant sizes, and other plant metrics during the project.

Create Restoration Designs Supported by Project Partners: Preliminary restoration designs that can be used to apply for implementation funding is a final key outcome of this project. Designs that are fully supported by the City of Vancouver, Friend of Vancouver Lake, Ecology, the LCFRB

and other partners and that are achievable, implementable at a scale (cost effective), and that are of sufficient detail to develop accurate grant applications and budgets will be considered successful.

Using the method described above, estimate the water quality and public health benefits that will be achieved by the project.

The project will achieve multiple water quality and public health benefits. Removing 3-acres of invasive plant species and planting 7200 native trees and shrubs will establish a healthy, functioning, self-sustaining, riparian forest. Over time, these trees will shade Burnt Bridge Creek, lower stream temperatures, increase floodplain complexity, contribute large wood debris to the floodplain and the creek, increase organic inputs to the creek, create more connections between the creek and its floodplain, increase stormwater infiltration and ground water recharge, and increase and improve habitat for birds, fish, wildlife, and other species.

The project will benefit public health in the following ways:

- Riparian restoration through extensive tree planting helps offset rising temperatures and those trees will lower stream temperatures and absorb more carbon dioxide. Improved water quality will make Burnt Bridge Creek safer for water contact recreation.

- Students physical activity and connection to nature will increase. The triple benefit of physical activity, direct connection to nature, and increased sense of place will provide students with the type of unique experience that stimulates active participation in similar activities (which the Estuary Partnership will continue to provide) and long-term health.

- Students' knowledge and understanding of the connection between stormwater and clean water is a critical first step toward behavior choices that are more protective of clean water and public health.

- The project integrates with Washington's No Child Left Inside Program (NCLIP) by providing students with environmental education programs that increase students' academic performance, self-esteem, personal responsibility, community involvement, personal health, and understanding of nature.

- The project will help teachers meet Washington State Science and Learning Standards and their classroom goals. Teachers' eagerness to participate in the project demonstrates how well it integrates with and builds on their classroom work.

-The volunteer events will engage people in outdoor, Covid-safe, community building events that engage them with other people and with the BBC watershed. Volunteering increases people's mental health and sense of well being, as does being outside, and working collaboratively with other people.

Finally the project's largest water quality benefit will come as a result of the restoration designs developed for the lower 45-acre BBC floodplain. This large area needs a comprehensive plan and approach that includes looking at alternatives like floodplain reconnection to achieve sustainable, high quality watershed processes that filter pollutants, increase ground water recharge, allow riparian plantings to thrive, and provide the kind of ecosystem services a functioning floodplain can provide. Without a restoration plan - the lower floodplain will continue to languish, continue to underperform, and continue to add to BBC's and Vancouver Lake's water quality problems versus helping to solve them. How long will the project provide benefits after the funding assistance ends? Who will be responsible for maintaining the benefits during its useful life?

The project will provide long term water quality benefits for decades. With over 20 years' experience delivering these types of programs, the Estuary Partnership knows that the benefits of working with teachers and students on stormwater education extend well beyond the project timeline. The BBC Alki West Project:

- Trains teachers to continue to integrate stormwater education into classroom lessons;
- Influences participants' behavior to become more water quality friendly;
- Motivates students and parents or guardians to participate in other stewardship projects;
- Inspires students and parents or guardians to appreciate and enjoy nature in new ways.

The project's approximately 7200 native trees and shrubs will also provide long-term water quality benefits. Pre-planting site prep, and post planting site maintenance by the City of Vancouver will ensure that invasive species are thoroughly controlled, that plant survival is high, and that trees are able to vigorously grow and reach a free-to-grow status that allows them to outcompete invasive species. Over time, the trees will reach maturity, and provide water quality benefits for hundreds of years as the site re-establishes natural conditions and natural tree-regeneration. Mature trees will benefit Burnt Bridge Creek water quality impairments directly through reduced solar radiation, and indirectly through an increase in channel complexity, as woody debris falls into the stream and onto the floodplain, creating a more natural channel with sinuosity and braiding. Trees will also create more interactions between the creek and its floodplain, and increase stormwater infiltration and ground water recharge. The City of Vancouver will maintain the riparian trees and shrubs for at least five years to ensure they are well-established and on a healthy growth trajectory.

The 3-acres (especially when combined with adjacent upstream Estuary Partnership and City projects) is large enough to be self-sustaining for decades. With fewer invasive plant species (because of herbicide treatments and native tree and shrub plantings) trees and shrubs will naturally regenerate, continuing the ecological cycle (and its water quality benefits) long after the funding assistance ends. The City of Vancouver will be responsible for maintaining the project's habitat and water quality benefits and they are the landowner, and an active partner in the project. Their long-term priority for the site is re-establishing the creek's healthy riparian forest.

Finally, the Alki Road section of BBC will really be on a trajectory towards success when the lower 45-acre floodplain reach is addressed through a series of restoration actions. The City of Vancouver fully supports development of restoration plans that will more comprehensively and holistically restore this large floodplain reach.

How will greenhouse gas emissions be reduced or mitigated under this project? And what policies or measures has your organization put in place to reduce greenhouse gas emissions apart from this project?

The Estuary Partnership will utilize multiple measures to reduce greenhouse gasses. The project will reduce greenhouse gases by reforesting 3-acres of riparian forest. On average, one acre of new forest can absorb about 2.5 tons of carbon annually. As trees mature they can absorb up to 48 pounds of carbon dioxide per year. Estuary Partnership's stormwater based environmental education includes discussions about climate change and the importance of riparian vegetation in the face of a warming planet. Students and parents or guardians will travel to the site in a large bus, reducing single car use.

The Estuary Partnership made a commitment to reduce greenhouse gas emissions many years ago by purchasing hybrid vehicles for staff travel. Additionally, a large percentage of employees bike to and from work. In addition, each year the Estuary Partnership plants over 10,000 native trees and shrubs along riparian corridors as part of our student and community volunteer programs. Many of our large restoration projects also include riparian plantings that will shade streams and absorb carbon. The Estuary Partnership's Comprehensive Conservation Management Plan (CCMP) was the first two-state plan that articulated the estuary's importance and identified a set of actions to address ecosystem degradation . The Plan was updated in 2011 to integrate climate change adaptations. Multiple actions in the Plan call for reductions in emissions and hydrocarbons (PAHs). Specifically, "Action 9: Ensure that development is ecologically sensitive and reduces carbon emissions" and "Action 12: Clean up, reduce or eliminate toxic contaminants, particularly contaminants of regional concern" which call for reducing hydrocarbons and heavy metals discharges.

The Estuary Partnership is one of 28 estuaries of National Significance and is a Climate Ready Estuary. We recently completed a Vulnerability Assessment of the Plan's actions – assessing the impact of seven climate change stressors on each action and the risk of those stressors to successful implementation of the action.

Are you aware of any Category I or Category II wetlands on the site or downstream from the site? This is for informational purposes; no points are associated with this question.

Yes 🖌 No Not Applicable

Upload a map that shows an aerial view of the project area, an estimated direction of flow for the project area, potential locations for the proposed facility or activity, and how the project connects to the water body named above.

The map does not need to be precise, but it should help reviewers with a general understanding of the area. If access to GIS software is not available, screen shots or snips from Google Maps with arrows and text added using a paint program may be used.

Upload Documents

10/15/2021

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https://ecyeagl/IntelliGrants_BASE/_Upload/186220_9	LCEP Overview Watershed Wide BBC Planting Site
36442-Map_BurntBridgeCreek_OverviewInset.pdf	
https://ecyeagl/IntelliGrants_BASE/_Upload/186220_9	Alki Road Planting Sites - Site 3 Ecology Grant Focus
36442_2-6.LCEPBBCSiteMapAlkiAreaMay2021(4).p	
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Organization: Lower Columbia Estuary Partnership

Environmental and Cultural Resources Documentation

The purpose of this form is for you to note which documents you have provided your grant or loan manager and/or environmental/cultural resource reviewer for all Water Quality Combined Funding Program projects, regardless of funding source or project category. It is not a location for sensitive documentation such as cultural resource reports. Those will be removed if you upload them. Once you have provided the following documents, check them off and upload any non-sensitive documents.

Cultural Review Final Determination

Date of Final Determination:

DAHP Letter of Concurrence

Completed activity/location specific Inadvertent Discovery Plan (IDP). An IDP is not associated with consultation and is required in the event of a discovery during ground disturbance.

If you are applying for or have received a loan from the CWSRF, when applicable upload any of the following documents provided to support completion of environmental requirements.

NEPA Environmental Assessment or Impact Statement SEPA Checklist SEPA Threshold Determination SEPA Environmental Impact Statement Affidavit of Publication of SEPA Threshold Determination Public Engagement and Outreach documentation, including Environmental Justice information SERP Information Packet Coversheet SERP request for NEPA Categorical Exclusion SERP SEPA Finding of Categorical Exemption SERP Determination Other supporting environmental documentation as requested by Ecology

If you have a stormwater facility project, and you are applying for or have received state funding via SFAP and no federal funds under CWSRF,

when applicable upload the following documents.

SEPA Checklist SEPA Threshold Determination Affidavit of Publication of SEPA Threshold Determination

Upload Documents

Any documents marked sensitive or do not disclose will be removed from EAGL by Technical Reviewers. If you received such a document, such as a cultural resource survey or monitoring report, send it directly to your Project Manager or Cultural Resource Contact.

Click the browse button Select your file Click Save, your file will appear in the list of uploaded documents

Organization: Lower Columbia Estuary Partnership

Environmental and Cultural Resources Documentation

Repeat for each file To Delete a file, select the Delete checkbox next to the file and click SAVE

Description

Attachments

Organization: Lower Columbia Estuary Partnership

Uploads

Attachments
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